CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-____

NPDES NO. CA0082406

FOR
INDIAN VALLEY HEALTH CARE DISTRICT
GEOTHERMAL SPACE HEATING PROJECT
PLUMAS COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code Sections 13267 and 13383 and describes requirements for monitoring effluent and receiving water. The Discharger shall not implement any changes to this MRP unless and until the Regional Board or Executive Officer approves such changes. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples shall be representative of the volume and nature of the discharge or material sampled. The time, date, and location of each sample shall be recorded on a chain of custody form for the sample.

All water quality sampling and analyses shall be performed in accordance with the Monitoring and Reporting Requirements as outlined in the Standard Provisions of this Order. Water quality sample collection, storage, and analyses shall be performed according to 40 CFR Part 136, or other methods approved and specified by the Executive Officer. Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health Services (DHS), except when a certified laboratory is not reasonably available to the Discharger, in which case a non-certified laboratory operating in compliance with an approved Quality Assurance-Quality Control program may be used.

Field test instruments (such as those used to test pH, electrical conductivity, or other constituents amenable to such instrumentation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;

2. The instruments are calibrated in accordance with the manufacturers recommendations and the method has been accepted by Regional Board Staff;

3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and

4. Field calibration reports are submitted as described in the “Reporting” section of this MRP.

EFFLUENT MONITORING

Effluent samples shall be collected for the geothermal discharge prior to dilution from any other source. Effluent samples should be representative of the volume and nature of the discharge. Time of collection of a grab sample shall be recorded. The following shall constitute the effluent monitoring program:

Constituent	Unit	Type of Sample	Sampling Frequency
24-Hour Total Flow	gpd	Cumulative	Monday through Friday
pH	pH units	Grab	Weekly
Specific Conductivity	µmhos/cm	Grab	Weekly
Total Dissolved Solids	mg/L	Grab	Monthly
Boron	µg/L	Grab	Semi-annually [1]
Fluoride	µg/L	Grab	Semi-annually [1]
Acute Toxicity[2]	% Survival	Grab	Annually
Priority Pollutant Metals	µg/L	Grab	Once during life of Permit

[1] To be performed in January (first quarter) and October (fourth quarter) each year.
[2] 96-hour static bioassay using fathead minnow. Test to be performed once at the commencement of pumping in the fall and once during the period of maximum use in the winter.

RECEIVING WATER MONITORING

Receiving water monitoring shall be conducted during discharge to Wolf Creek. All receiving water samples shall be grab samples. Receiving water samples shall be taken from the following:

Station	Description
R-1	50 feet upstream from the point of discharge of drainage ditch to Wolf Creek
R-2	100 feet downstream from the point of discharge of drainage ditch to Wolf Creek

The following shall constitute the receiving water monitoring program:

Constituent	Unit	Station	Sampling Frequency
Flow	cfs	Staff Gauge above R-1	Daily during Sep., Oct., Nov. and May
pH	pH units	R-1, R-2	Weekly
Temperature	°F	R-1, R-2	Weekly
Specific Conductivity	µmhos/cm	R-1, R-2	Weekly
Total Dissolved Solids	mg/l	R-1, R-2	Semi-annually [1]
Boron	µg/l	R-2	Semi-annually [1]
Fluoride	µg/l	R-2	Semi-annually [1]
Priority Pollutant Metals	µg/L	R-1	Once during life of Permit

[1] To be performed in January (first quarter) and October (fourth quarter) each year.
[2] To be collected at the same time as effluent priority pollutant sample.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-l and R-3. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
d. Aquatic life

Notes on receiving water conditions shall be summarized in the monitoring report.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to Wolf Creek at a dilution of 1:10 (effluent to receiving water). The testing shall be conducted as specified in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms*, EPA 600-4-91-002, or latest edition. Chronic toxicity samples shall be collected at the discharge of the heat exchanger prior to its entering the storm drain. Twenty-four-hour composite or flow proportional samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas*, *Ceriodaphnia dubia*, and *Selenastrum capricornutum*

Frequency: Once during the life of the permit

If a sample at a dilution of 1:10 (effluent to receiving water) exhibits toxicity, the Discharger shall sample the discharge and conduct the test using the dilution series specified below. The results shall be submitted with the monitoring report and include the following:

	Dilutions (%)			Controls	
	12.5	**6.25**	**3.125**	**Receiving Water**	**Lab Water**
% Discharge Effluent	12.5	6.25	3.125	0	0
% Dilution Water[1]	87.5	93.75	96.875	100	0
% Lab Water	0	0	0	0	100

[1] Dilution water shall be receiving water from Wolf Creek upstream from the discharge point. If the receiving water exhibits toxicity the Discharge may use lab water as dilution water.

PRIORITY POLLUTANT METALS MONITORING

The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP). The SIP states that the Regional Boards will require periodic monitoring (at least once prior to issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established.

The Regional Board has determined that, based on priority pollutant data received to date, discharge of priority pollutants other than metals is highly unlikely. Accordingly, the Regional Board is requiring, as part of this Monitoring and Reporting Program, that the Discharger conduct effluent and receiving water monitoring (at a receiving water station upstream of the point of discharge) and analysis of priority pollutant metals **one time at least 180 days but no more than 365 days prior to expiration of this Order.**

The Discharger must analyze pH and hardness of the effluent and receiving water at the same time as priority pollutant metals. The priority pollutant metals for which this one-time analysis is required are as follows:

- Antimony
- Arsenic
- Beryllium
- Cadmium
- Chromium (III)
- Chromium (IV)
- Copper
- Lead
- Mercury
- Nickel
- Selenium
- Silver
- Thallium
- Zinc

Metals shall be analyzed by the USEPA methods listed below. Alternative analytical procedures may be used with approval by the Regional Board if the alternative method has the same or better detection level than the method listed.

Method Description	**EPA Method**	**Constituents**
Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)	1638	Antimony, Beryllium, Cadmium, Copper, Lead, Nickel, Selenium, Silver, Thallium, Total Chromium, Zinc
Cold Vapor Atomic Absorption (CVAA)	1631	Mercury
Gaseous Hydride Atomic Absorption (HYDRIDE)	206.3	Arsenic
Flame Atomic Absorption (FAA)	218.4	Chromium VI

All priority pollutant metal analyses shall be performed at a laboratory certified by the DHS. The laboratory is required to submit the Minimum Level (ML) and the Method Detection Limit (MDL) with the reported results for each constituent. The MDL should be as close as practicable to the U.S. EPA MDL determined by the procedure found in 40 CFR Part 136. The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols:

a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory.
b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
c. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration." Numerical estimates of data quality may be by percent accuracy (+ or – a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

d. Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

REPORTING

The Discharger shall submit monthly monitoring reports to the Regional Board by the **first day of the second month** following sample collection (i.e., the January report is due by 1 March). All reports submitted in response to this Order shall comply with signatory requirements of Standard Provision D.6. Effective in January 2004, any NPDES effluent monitoring report received more than 30 days after its due date is subject to a $3000 Mandatory Minimum Penalty [Water Code Section 13385]. An additional $3000 penalty is required for each 30 days a report is late. If you have no discharge, you must still submit a report indicating that no discharge occurred, or you will be subject to the $3000 Penalties.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.

The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Board.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

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(Date)